Alberta Environment

WASTE NOT

ALBERTA'S APPROACH TO WASTE MANAGEMENT

Facts about waste in Alberta, March 2004

105-01738/

Alberta has been a leader in waste management practices and policies since it created Canada's first Environment department in 1971.

Over the past 20 years, rapid population and economic growth have increased the pressure on Alberta's waste infrastructure.

This important issue requires progressive action. The province must be prepared to deal with future waste challenges.

TURNING DOWN THE VOLUME

We must reduce the amount of waste we dispose of in landfills. Alternatives to waste disposal, such as minimizing the amount of waste generated and diverting waste streams for other applications, are key areas for a province-wide approach for waste management.

- **Decrease the amount of material sent to municipal landfills to 500 kilograms per capita by the year 2010.**

- Increase pollution prevention and waste reduction efforts.
- Ensure a sustainable waste diversion and disposal infrastructure is in place to manage increasing and diversified wastes.
- Ensure that waste disposal practices protect human and environmental health.

Environmental stewardship, at its heart, involves each of us caring for our land, air and water. Stewardship programs may be voluntary or regulated, public or private, involve individual activities or national endeavours, and are a complex blend of ethics, awareness, education and action.

Municipal, industrial and public stewardship programs have been – and will continue to be – key in minimizing, diverting and disposing of waste materials. And already there are many programs operating efficiently and effectively throughout the province.

As we move toward our goal of reducing the amount of waste sent to landfill, stewardship programs will play an even greater role in waste reduction efforts. A strong, responsible province-wide approach will protect and conserve our resources.

LESS IS MORE

WASTE COMPOSITION

Alberta's waste comes from these three areas:

- Industrial / Commercial / Institutional
- Residential
- Construction / Renovation / Demolition

There are a number of factors that affect the waste reduction options that might be used.

- Composition – materials that are found in paper, pop cans, tires and oil make for effective recycling programs.
- Volume – materials that make up a large portion of the waste sent to landfill, such as paper, cardboard and organics.
- Hazard – materials that are a small percentage of the waste stream but can be harmful to the environment if disposed of improperly.

FACT 1. Composting is nature's disposal system: it keeps organic material out of the waste stream and provides a natural fertilizer for gardens. An average family of four can compost over 500 kilograms of food and yard waste in a year.

FACT 2. Albertans fail to redeem more than $18 million worth of empty container deposits by not recycling each year.

DOING THINGS RIGHT

Alberta has achieved significant success in waste management over the last 30 years. The province has built strong programs and initiatives with support from Delegated Administrative Organizations, municipalities and other groups.

Introduced the *Beverage Container Act*, aimed at litter control, in 1972.

Established grant programs to support regional integrated waste management facilities and local recycling operations.

Since the establishment of Action on Waste in 1991, the province has achieved a 28 per cent per capita decrease, from 1988 levels, of waste going to municipal landfills.

Implemented hazardous waste legislation, the Swan Hills Waste Treatment Centre and the Hazardous Waste Manifest System.

Developed or assisted with stewardship programs to manage the recycling of beverage containers, used oil, scrap tires, milk containers and other wastes.

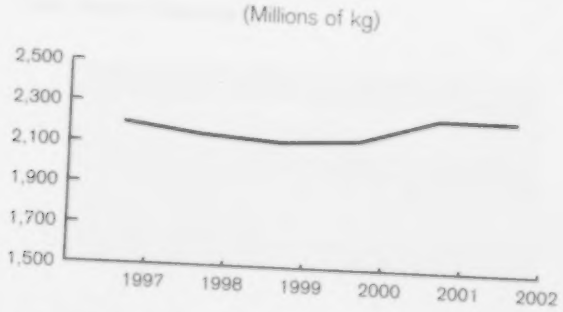
Created the Household Hazardous Waste collection program.

FACT 2. Albertans fail to redeem more than $18 million worth of empty container deposits by not recycling each year.

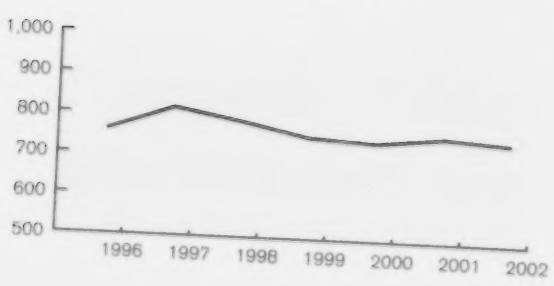
Although Alberta continues to lead the way with many successful programs, a number of issues are driving the need to reassess our overall waste management strategies.

Landfill Alternatives

Alberta's increasing population and strong economy have resulted in an increase in the amount of waste going to landfills each year.



As well, per capita waste disposal is remaining relatively constant despite initiatives to encourage waste reduction and recycling.

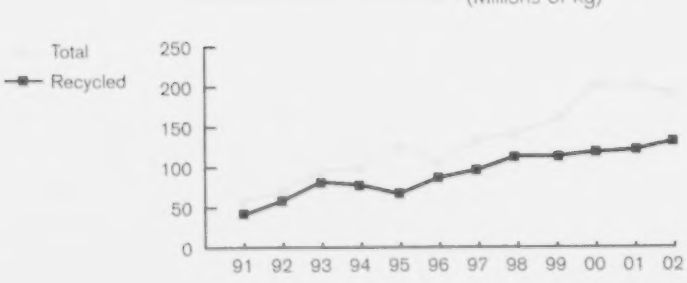


Finding sites for new landfills is a difficult, expensive, time-consuming process. The need for more landfills will increase unless the volume of waste entering Alberta landfills is reduced. Using existing sites as long as possible supports the sustainability of Alberta's current landfill network.

While landfills will always have a place in waste management, alternate approaches are needed now.

Hazardous Waste Generation

Hazardous waste generation in Alberta has increased substantially over the past decade. The majority of hazardous waste generated in Alberta (approximately 70 per cent) is recycled.



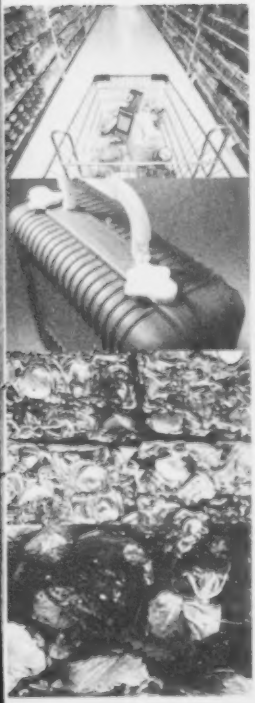
Hazardous wastes usually consist of solid or liquid materials, or containers holding gases with flammable, corrosive, explosive or toxic characteristics. These wastes are harmful to humans and the environment without special handling and treatment.

Hazardous waste that is not recycled is treated at the Swan Hills Treatment Centre or shipped out of the province for treatment. Pollution prevention initiatives may provide further opportunities for hazardous waste reduction.

FACT 3. Over 10 million litres of Household Hazardous Waste have been safely treated and disposed of in Alberta since 1988.

Ongoing improvement to the provincial waste management system is essential for the sustainability of our environment, our economy and our quality of life.

Waste management strategies move through a hierarchy from most to least desirable. Strategies that support Reduce, Reuse, Recycle and Recover – in that order – are needed to create a sustainable future in waste management.



Reduce

Reducing the amount of waste we create through pollution prevention activities and more efficient use of natural resources is the best waste management option.

Reuse

Reusing items for the same or different purposes can lead to long-term savings both economically and environmentally.

Recycle & Recover

Recycling, composting and energy recovery are alternatives to waste disposal.

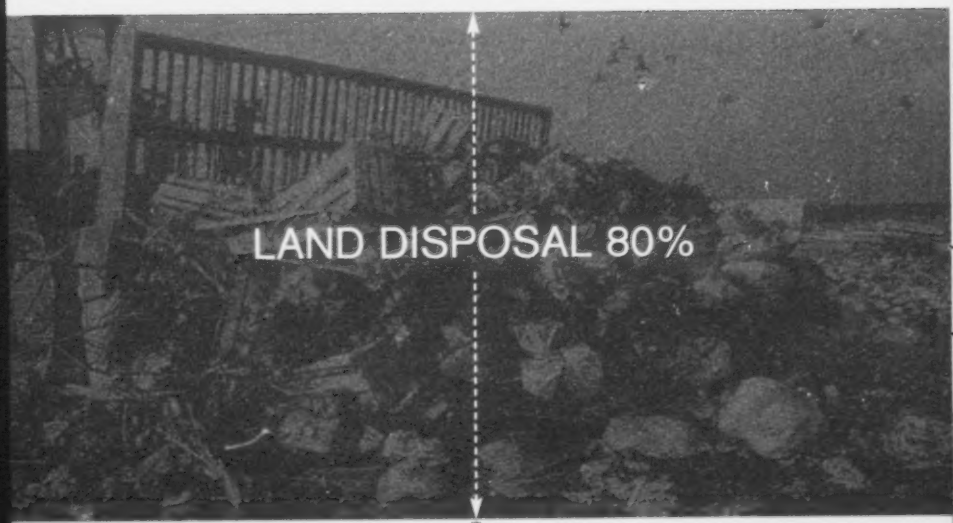
Disposal

Disposal should only be an option if none of the above are appropriate.

Alberta Environment has set a target: to reduce the amount of municipal solid waste going to Alberta landfills to 500 kilograms per person by the year 2010. This is a substantial reduction considering the 750 kilograms per person disposed of in landfills in 2002.

This target is reachable: an estimated 80 per cent of material sent to landfills in Alberta can be recovered through composting (organics) and recycling (paper, cardboard, metal, plastic, glass).

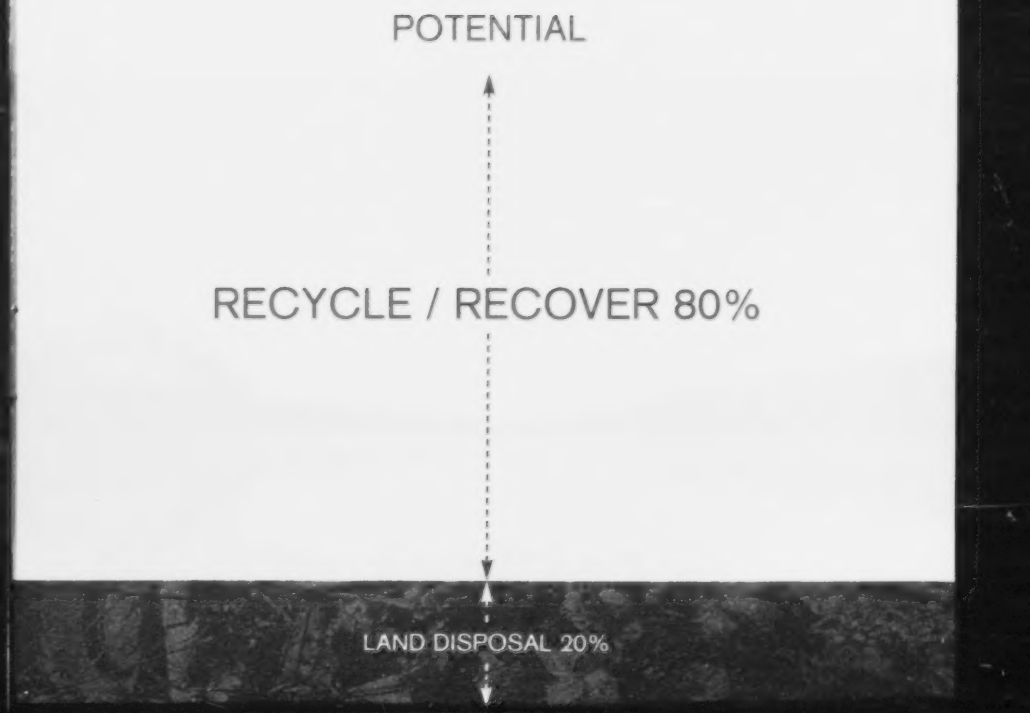
CURRENT



RECYCLE / RECOVER 20%

Our challenge is to move away from waste disposal and towards pollution prevention, waste reduction, reuse and recycling. Our ultimate goal? 80 per cent recycled, only 20 per cent landfilled.

Working with its partner organizations, Alberta Environment is pursuing a number of strategies and initiatives, all with the intent of reducing waste going to landfill and managing waste resources in an economically and environmentally sustainable manner.



PARTNERS IN WASTE MANAGEMENT

The partners in waste management in Alberta include government, municipalities, industry, Delegated Administrative Organizations, environmental groups and other organizations.

Alberta Environment

Alberta Environment is committed to the protection of Alberta's environment and resources through the proper management of waste. Its main focus is to foster municipal, industrial and public stewardship to help minimize, divert, or dispose of wastes in ways that reduce the impact on the environment.

The department is responsible for province-wide legislation, regulations and guidelines for various wastes under the *Environmental Protection and Enhancement Act*, the Substance Release Regulation and the Waste Control Regulation. The regulatory responsibility for landfills was transferred from Alberta Health to Alberta Environment in 1996.

In 1975, the department introduced the Waste Management Assistance Program to fund the replacement of hundreds of unsafe, open dumpsites with higher standard, regionally-located landfills. Since the program began, over 350 open dumps have been closed and more than 40 regional landfills have been developed. These engineered landfills are safer for the public and the environment. The total investment to date is more than $66 million.

One year later, the Resource Recovery Grant Program began to provide start-up capital assistance to municipalities and non-profit organizations for waste minimization projects. Since then, the program has invested over nine million dollars into recycling projects in more than 200 communities.

www.gov.ab.ca/env

Action on Waste

Action on WASTE

In 1991, then Minister of the Environment, Honourable Ralph Klein announced the Action on Waste program and plans to reduce waste going to Alberta landfills. Over the past decade, Action on Waste has targeted specific wastes including construction, renovation and demolition material, household hazardous wastes, organic matter and electronic products. It oversees regulated and voluntary recycling programs, and represents Alberta Environment on many boards and committees.

Action on Waste's ongoing efforts include expanding waste reduction programs, creating and distributing educational materials ranging from brochures, fact sheets and manuals for municipalities, industry and the public, and operating the toll-free Recycling Information Line (1-800-463-6326).

Action on Waste has been aided in its efforts by the support of many partners, including the Recycling Council of Alberta, the Capital Region Waste Minimization Advisory and Technical Committees, Northern Coordinated Action for Recycling Enterprises, Calgary Regional Partnership, Alberta Dairy Council and the Alberta Plastics Recycling Association.

www.gov.ab.ca/env/waste/aow

FACT 4. During the first 15 years of burial in a landfill, only 25 per cent of organic materials, such as food and yard waste decomposes. Other trash can keep its original weight, volume and form for at least 40 years.

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The Government of Alberta is responsible for provincial waste standards and guidelines, but Alberta's municipalities manage the "on-the-ground" operations of municipal and regional landfills, and community waste diversion efforts.

Waste programs vary across Alberta, with municipalities developing management strategies that work best for their particular circumstances and location. Many local community groups and non-government organizations devote a tremendous amount of time to advancing waste reduction and recycling programs.

Three Delegated Administrative Organizations, operating at arms length from government, report to the Environment Minister. Each one is supported by government regulation, has the authority to generate revenue, has a dedicated fund to operate its program (collected from visible fees) and is managed by a Board of Directors.

Tire Recycling Management Association of Alberta

Beverage Container Management Board

Alberta Used Oil Management Association

Tire Recycling Management Association of Alberta

The Tire Recycling Management Association (TRMA) was established in 1992 to develop a made-in-Alberta solution for scrap tire stockpiles in the province. Until that time, stockpiles posed a potential fire and health hazard, and were taking up valuable space in landfills.

Tire Recycling Management Association of Alberta

Since 1992, more than 30 million tires have been recycled and approximately three million tires are currently recycled on an annual basis. This effort has lead to the virtual elimination of all major tire stockpiles in the province.

The TRMA has established a self-sufficient provincial tire recycling industry that is the model of environmental excellence and serves as the basis for recycling efforts in other areas.

www.trma.com

Beverage Container Management Board

Since 1997, the Beverage Container Management Board (BCMB) has worked to ensure Albertans have an easy-to-use and cost-effective recycling system for beverage containers. The program began as a response to the litter created by disposable beverage containers. Consumers pay a deposit when purchasing applicable containers and are refunded that deposit upon taking the containers to a bottle depot.

bcmb
BEVERAGE CONTAINER MANAGEMENT BOARD

Quick facts

Consumers pay a four dollar levy when they purchase their tires, and the funds are used by the TRMA to manage the provincial tire recycling program.

Recycled scrap tire products manufactured in Alberta include "loose crumb" for safer-than-sand playgrounds, loose crumb filled "mattresses" for the dairy industry, molded products such as patio "pavers", floor tiles and residential roofing shingles.

More than 80 per cent of the recycled rubber material is used right here in Alberta.

TRMA has partnered with Alberta Transportation, City of Edmonton, City of Calgary and Strathcona County to research the use of recycled rubber tire crumb in asphalt to increase its life and reduce road noise.

More than $200 million in landfill space (based on full-cost analysis) is estimated to have been saved by diverting tires from landfill disposal.

In 2002, more than one billion containers – over 80 per cent of those sold in Alberta – were returned to bottle depots and reused or recycled into other valuable products. The BCMB continues to improve the level of public satisfaction, improve system effectiveness and maximize the recovery of regulated beverage containers. Its vision is to protect Alberta's environment by minimizing the presence of beverage containers in the waste stream.

www.bcmb.ab.ca

Alberta Used Oil Management Association

The Alberta Used Oil Management Association (AUOMA) was established to deal with the millions of litres of used oil, oil filters and plastic oil containers that were being improperly disposed of each year. The pilot program was launched in 1993, with the regulation coming into effect in 1997.

Each applicable oil product is assessed an Environmental Handling Charge that is paid at the wholesale level. Collected funds are dedicated to the collection and processing of used oil materials as well as administrative costs. A return incentive is paid to registered collectors for pick-up and delivery of materials.

FACT 5. Studies show that 25 per cent of waste can be diverted away from landfill through changes in consumer behaviour.

Every year since its inception, the AUOMA program has increased the volume and percentage of materials collected for recycling in Alberta. Its mission is to continue developing and managing programs that encourage responsible environmental handling and recycling of used oil materials.

In 2002-03, over 66 million litres of used oil, six million oil filters, and one million kilograms of plastic containers were recovered.

Recycled oil is re-refined and used again as oil for producing highway asphalt and burned for energy; oil filters are recycled into metal products such as rebar, nails and wire; and plastic oil containers are made into new containers, highway guard rails, plastic pipe, fence-posts and patio furniture.

AUOMA was the template for the development of used oil programs in the other three western provinces and won an Emerald Award in 2001.

www.usedoilrecycling.com

Did you know?
There are more than 1.5 billion beverage containers (excluding milk) sold annually in Alberta.

Recycling beverage containers diverts more than 45,000 tonnes of material from landfill every year.

More than 200 independently owned bottle depots operate in the province.

VOLUNTARY PROGRAMS

Government, municipalities and other organizations have developed a number of programs and initiatives that depend on voluntary participation by Albertans. These various initiatives will continue to make a significant contribution to the province's waste reduction efforts.

Pesticide Container Collection

The Pesticide Management Program administers and enforces provincial legislation to ensure safe distribution, storage, use and disposal of pesticides. In 1980, a pilot program set up 122 sites at which farmers and commercial applicators could properly dispose of their empty pesticide containers.

In the first year, over 80,000 containers were collected. Metal pails (predominant at that time) were collected and sent to a local steel mill for recycling. Since then, the collection program has grown in Alberta and across Canada.

In 1997, over one million containers were collected in Alberta. The majority of containers, now plastic, are recycled into fence posts or used for heat recovery.

There are now 99 container collection sites throughout Alberta.

www.gov.ab.ca/env/protenf
/pesticide/waste/containercollection

Operation CleanFarm

Operation CleanFarm began in 2002. At a specified time each fall, this three-year program offers farmers safe disposal for their obsolete or leftover pesticides at no cost.

Operation CleanFarm is part of CropLife Canada's Stewardship First program, which promotes the safe and responsible use of crop protection products. To date, more than 91 tonnes of material has been collected in Alberta. The program won a Premier's Award of Excellence in 2003.

www.gov.ab.ca/env/protenf/pesticide/cleanfarm

Milk Container Recycling Program

Alberta Dairy Council

Milk Container Recycling Program

The Alberta Dairy Council launched the Milk Container Recycling Program in 1999. The Council provides the financial and technical support to community-based recycling programs that collect used milk containers.

Plastic milk jugs are recycled into products such as drainage tiles, flowerpots and plastic lumber. Recycled milk cartons are used to make corrugated cardboard and writing paper. The Milk Container Recycling Program won an Emerald Award in 2002 – the same year it expanded to include paper milk cartons.

www.milkcontainerrecycling.com

Fluorescent Bulb and Computer Recycling

Alberta was the first province to introduce a voluntary program to increase recycling rates for obsolete computers and burnt out fluorescent bulbs. These materials contain lead and mercury – toxic materials that, if placed in landfills, can leach into the soil or groundwater.

The program began in 2001, with a focus on municipalities, universities, schools and hospitals. The second phase concentrated on the industrial, commercial and institutional sectors. Organizations and companies in each sector are asked to join the program as a Partner in Recycling, formally agreeing to safely recycle fluorescent bulbs and end-of-life computers.

More than 130 organizations have become partners. Tonnes of computer waste and thousands of metres of fluorescent bulbs have been safely recycled due to the voluntary efforts of these partner organizations and the cooperation of participating recyclers.

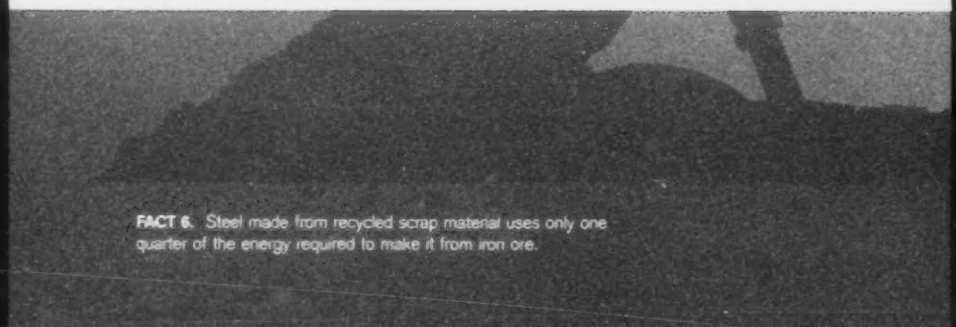
www.gov.ab.ca/env/waste/aow/flcr

Construction, Renovation and Demolition Waste

Construction, renovation and demolition (CRD) waste makes up 27 per cent of the waste going into Alberta's landfills. This waste consists mainly of materials for which reuse opportunities and recycling markets already exist. By changing the way CRD projects are managed, the amount of waste generated can be dramatically reduced.

A series of web pages housed on Alberta Environment's website provide market reports on CRD materials, contract specification guidelines, case studies of successful demolition projects and "how-to" guides for reducing CRD waste.

www.gov.ab.ca/env/waste/aow/crd



FACT 6. Steel made from recycled scrap material uses only one quarter of the energy required to make it from iron ore.

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Household Hazardous Waste

Household Hazardous Waste (HHW) refers to materials used in daily activities that are potentially damaging to our environment, health and safety. Typical household hazardous wastes are materials left over from such activities as painting, cleaning, disinfecting and gardening.

Communities throughout Alberta participate in annual one-day HHW roundups and/or offer year-round collection facilities. Municipalities organize the roundups and pay for collection of the material. Alberta Environment provides funds for the transportation, treatment and disposal of collected material at the Swan Hills Treatment Centre.

Since 1988, over 10 million litres of household hazardous waste materials have been safely treated and disposed of through the HHW program.

To view a schedule for roundup days or permanent collection facilities, visit the HHW website.

www.gov.ab.ca/env/waste/aow/hhw

Organics

Compostable organic wastes are estimated to make up more than 30 per cent of the solid waste stream in Alberta. This is at least 600,000 tonnes of material that could be diverted from landfills each year. Organic materials include yard and garden waste, kitchen scraps, lawn clippings and agricultural materials.

In 1993, there were three compost operations in the province; today, there are over 100. Most facilities are relatively small, dealing mainly with yard and garden materials.

Action on Waste has supported the Composting Council of Canada in numerous endeavours, including the production of composting fact sheets for compost operators and the general public. The department has also supported compost research at the Olds College Composting Technology Centre.

www.gov.ab.ca/env/waste/aow/orgcomp

FUTURE CHALLENGES

BUILDING BETTER WASTE OPTIONS

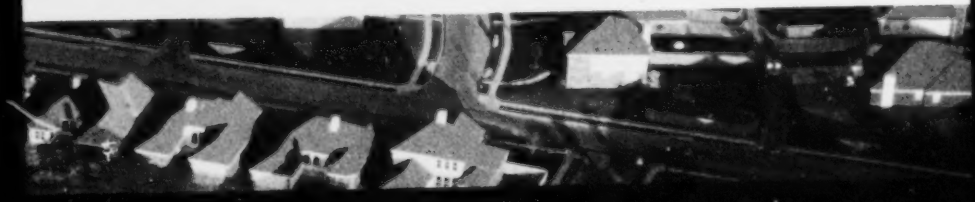
Alberta faces a number of challenges to achieve the significant waste reduction target of 500 kilograms per capita by the year 2010. Part of this challenge will be integrating and developing new programs and partner-ships to deal with growing levels of electronic waste, hazardous materials and organics.

ELECTRONIC WASTE (E-WASTE)

The disposal of electronic waste is a growing concern because of rapid advances in technology and the fast pace at which computers, television sets and other electronic equipment become obsolete.

As a result, the province is reviewing waste regulations, stewardship programs and existing collection infrastruc-ture in order to develop a formal recycling program for electronic waste. As part of its review, Alberta Environment consulted with key stakeholders and Albertans in November and December 2003. Based on consultation recommendations, the province will release regulations and guidelines for the e-waste recycling system in spring 2004 – to ensure Alberta's e-waste is recycled or reused in an environmentally responsible manner.

Alberta will work with other jurisdictions to ensure the program complements any future national initiatives.



FACT 7. At least 600,000 tonnes of yard and garden waste, lawn clippings and kitchen scraps could be diverted from landfills each year.

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Alberta Environment, working with municipalities, will continue to fund the treatment and disposal of Household Hazardous Waste (HHW) through annual roundups. Since 1988/89 the amount of HHW collected has continually increased with more than one million litres collected in the last year alone. Post-consumer paint remains the largest part of the waste stream accounting for approximately 75 per cent of the volume. With a growing interest in alternative solutions, the Alberta government is developing a program for paint, a material that is both reusable and recyclable.

Alberta Environment is working with municipalities to develop progressive approaches to reduce compostable waste. For example, stakeholders are discussing ways to increase resource recovery through incentives and disincentives which may include banning compostable items from landfills. The department is also reviewing compost legislation, including the Code of Practice for Compost Facilities, and will continue to be involved in refining compost quality guidelines.

ELATED SITES

Alberta Beverage Container Recycling Corporation
www.abcrc.com

Alberta Plastics Recycling Association
www.plasticsrecycling.ab.ca

Alberta Used Oil Materials Association
www.usedoilrecycling.com

Beverage Container Management Board
www.bcmb.ab.ca

Capital Region Waste Minimization Advisory Committee
www.gov.ab.ca/env/waste/aow/crwmac

Composting Council of Canada
www.compost.org

Northern Coordinated Action for Recycling Enterprises
www.northerncare.org

Olds College Composting Technology Centre
www.oldscollege.ab.ca

Milk Container Recycling Program
www.milkcontainerrecycling.com

Rechargeable Battery Recycling Corporation
www.rbrc.org

Recycling Council of Alberta
www.recycle.ab.ca

Tire Recycling Management Association
www.trma.com

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